

Docket No.: 4661-0108PUS1  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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In re Patent Application of:  
Banwari LAL et al.

Application No.: 10/564,365

Confirmation No.: 9223

Filed: June 2, 2006

Art Unit: N/A

For: A PROCESS FOR ENHANCED RECOVERY  
OF CRUDE OIL FROM OIL WELLS USING  
NOVEL MICROBIAL CONSORTIUM

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Examiner: Not Yet Assigned

**INFORMATION DISCLOSURE STATEMENT**  
**(SUBMISSION AFTER FILING OF AN APPLICATION BUT BEFORE FINAL**  
**REJECTION OR NOTICE OF ALLOWANCE OR CONCURRENTLY WITH A RULE**  
**1.114 RCE APPLICATION)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. §§ 1.97 and 1.98, applicant(s) hereby submit(s) an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS OR OTHER INFORMATION

The patents, publications, or other information submitted for consideration by the Office are listed on the PTO-SB08(s), attached hereto.

II. COPIES

☒ a. Copies of cited U.S. patents and patent application publications are not included.  
Copies of foreign patent documents and non-patent literature are included.

☐ b. Some or all of the documents listed on the PTO-SB08 are not enclosed because they were cited in the International Search Report and copies should already be in the PTO file. If copies are needed, please contact the undersigned.

☐ c. REFERENCES PREVIOUSLY CITED OR SUBMITTED - Pursuant to 37 C.F.R. §1.98(d), consideration of information listed on the PTO-SB08 form(s) is requested since any patents, publications, or other information which are listed on the PTO-SB08 form(s) but for which copies are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Appl. No(s) and U.S. Filing Date

PCT/IN2004/000206 filed July 14, 2004

III. CONCISE EXPLANATION OF THE RELEVANCE

(check at least one box)

☒ a. DOCUMENTS IN THE ENGLISH LANGUAGE - The patents, publications, or other information listed on the attached PTO SB08 are in the English language and therefore, do not require a statement of relevancy.

☐ b. DOCUMENTS NOT IN THE ENGLISH LANGUAGE - A concise explanation of the relevance of all patents, publications, or other information listed that is not in the English language is as follows:

☐ c. ENGLISH LANGUAGE SEARCH REPORT - An English language version of the search report or action that indicates the degree of relevance found by the foreign office is attached, thereby satisfying the requirement for a concise explanation. See MPEP 609(III)(A)(3).

☒ d. OTHER - The following additional information is provided for the Examiner's consideration. Copies of the references CB, CE, CH and CI and CJ are not provided, as they have not been provided to Applicants

IV. FEES (check one box)

☐ a. This Information Disclosure Statement is being filed concurrently with the filing of a new patent application; therefore, no fee is required.

☐ b. This Information Disclosure Statement is being filed concurrent with the filing of a continuation-in-part, continuation, or divisional patent application; therefore, no fee is required.

☐ c. This Information Disclosure Statement is being filed within three months of the filing date of a national application (37 C.F.R. § 1.97(b)(1)). No fee or statement is required.  
*(This section is not to be used with RCE's.)*

☐ d. This Information Disclosure Statement is being filed within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or statement is required.

☐ e. This Information Disclosure Statement is being filed concurrently with the filing of a Request for Continued Examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.

☒ f. This Information Disclosure Statement is being filed before the mailing date of a first Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or statement is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the statement under 37 C.F.R. § 1.97(e) below, or, if no statement has been made, charge our deposit account for the fee as required by 37 C.F.R. § 1.17(p).

☐ g. This Information Disclosure Statement is being filed before the mailing date of a Final Office Action under 37 C.F.R. § 1.113 (See 37 C.F.R. § 1.97(c)(1)) or before the mailing date of a Notice of Allowance under 37 C.F.R. § 1.311 (See 37 C.F.R. § 1.97(c)(2)).

☐ No statement; therefore, a fee as required by 37 C.F.R. § 1.17(p) is attached.

or

☐ See the statement below. No fee is required.

V. STATEMENT UNDER 37 C.F.R. § 1.97(e)

(check only one box)

The undersigned hereby states that:

☐ a. **Each item of information contained in the IDS was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than 30 days prior to the filing of this IDS; or**

☐ b. Each item of information contained in the IDS was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

☐ c. No item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of the IDS.

☐ d. Some of the items of information were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was first cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application and, to the best of my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

VI. PAYMENT OF FEES (check one box)

- ☐ The required fee is listed on the attached Fee Transmittal.
- ☒ No fee is required.


If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule and charge the appropriate fee to Deposit Account No. 02-2448.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

Dated:

JUL 3 0 2007

Respectfully submitted,

By   
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(858) 792-8855  
Attorney for Applicant

Attachment(s):

- ☒ PTO/SB/08
- ☒ Document(s)

|  |   |    |   |                          |                        |
|--|---|----|---|--------------------------|------------------------|
| Substitute for form 1449/PTO   |   |    |   | <b>Complete if Known</b> |                        |
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br><i>(Use as many sheets as necessary)</i> |   |    |   | Application Number       | 10/564,365-Conf. #9223 |
|  |   |    |   | Filing Date              | June 2, 2006           |
|  |   |    |   | First Named Inventor     | Banwari LAL            |
|  |   |    |   | Art Unit                 | N/A                    |
|  |   |    |   | Examiner Name            | Not Yet Assigned       |
| Sheet  | 1 | of | 2 | Attorney Docket Number   | 4661-0108PUS1          |

| U.S. PATENT DOCUMENTS |                          |  |                                |  |   |
|-----------------------|--------------------------|--|--------------------------------|--|---|
| Examiner<br>Initials* | Cite<br>No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |
|                       |                          | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
|                       | AA*                      | US- 4,558, 739                           | 12-17-1985                     | McInerney et al.                                   |   |

| NON PATENT LITERATURE DOCUMENTS |                          |  |  |  |                |
|---------------------------------|--------------------------|--|--|--|----------------|
| Examiner<br>Initials*           | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.  |  |  | T <sup>2</sup> |
|                                 | CA                       | Bryant RS, Stepp A K, Bertus KM, Burchfield TE, Dennis M (1993) Microbial Enhanced waterflooding field pilots. Devel Petrol Sci 39: 289-306.   |  |  |                |
|                                 | CB                       | Hlitzman DO Petroleum microbiology and the history of its role in enhanced oil recovery, In: Proceedings of the International Conference on Microbial Enhancement of Oil Recovery. (E.C. Donaldson and J.B. Clarke, eds.) pp. 162-218. Technology Transfer Branch, U.S. Department of Energy, Bartlesville, OK.  |  |  |                |
|                                 | CC                       | Jenneman G.E. et. al., Identification, characterization and application of sulfide-oxidizing bacteria in oilfields; Microbial Biosystem: New Frontiers, 1999 by Atlantic Canadian Society for Microbial Ecology, Halifax Canada, 1999.   |  |  |                |
|                                 | CD                       | Knapp RM, McInerney MJ, Coates JD, Menzie DE, Bhupathiraju VK (1992) Design and implementation of a microbially enhanced oil recovery field pilot, Payne Count, Microbial Ecology of Oil Fields Oklahoma. SPE 24818. Presented at the 1992 Annual Technical Conference and Exhibition, Dallas, TX  |  |  |                |
|                                 | CE                       | Lazar I, Debrota S, Stefanescu MC, Sandulescu, L, Paduraru R, Stefanescu M, MEOR, recent field trials in Romania: reservoir selection, type of inoculums, protocol for well treatment and line monitoring. Devel Petrol Sci 39:265-288 (1993)  |  |  |                |
|                                 | CF                       | Lin S-C, Minton MA, Sharma MM, Georgiou G (1994) Structural and immunological characterization of a biosurfactant produced by Bacillus licheniformis JF-2. Appl Environ Microbiol 60: 31-38.   |  |  |                |
|                                 | CG                       | McInerney M J, Javaheri M., Nagle DP Jr. (1990) Properties of the biosurfactant produced by Bacillus licheniformis strain JF-2. J Indust Microbiol 5: 95-102.  |  |  |                |
|                                 | CH                       | Michael J. McInerney, Roy M.Knapp, Use of Indigenous or Injected Microorganisms for Enhanced Oil Recovery, Microbial Biosystem: New Frontiers, 1999 by Atlantic Canadian Society for Microbial Ecology, Halifax Canada, 1999.  |  |  |                |
|                                 | CI                       | Nelson L. Schneider DR (1993) Six years of paraffin control and enhanced oil recovery with Microbial Product, Para-BacTM. Devel Petrol Sci 39 355-362  |  |  |                |
|                                 | CJ                       | Portwood JT (1995) A commercial microbial enhanced oil recovery process: statistical evaluation of a multi-project database, In: The Fifth International Conference on Microbial Enhanced Oil Recovery and Related Biotechnology for Solving Environmental Problems (R. S. Bryant and L K Sublette eds.). pp. 51-76. Office of Scientific and Technical Information. CONF-9509173. |  |  |                |
|                                 | CK                       | Raiders RA, Knapp RM, McInerney MJ (1989). Microbial selective plugging and enhanced oil recovery, J Indust Microbiol 4: 215-230   |  |  |                |
|                                 | CL                       | Streeb LP, Brown FG (1992) MEOR-Altamount/Bluebell field project. PE 24334. Presented at the SPE Rocky Mountain Regional Meeting, Casper, Wyoming.   |  |  |                |
|                                 | CM                       | Telang AJ, Ebert S, Foght JM, Westlake DWS, Jenneman GE, Gevertz D, Voordouw G (1997) Effect of nitrate injection on the microbial community in an oil field as monitored by reverse   |  |  |                |

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|-----------------------|--|--------------------|--|
| Examiner<br>Signature |  | Date<br>Considered |  |
|-----------------------|--|--------------------|--|

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|--|---|----|---|--------------------------|------------------------|
| Substitute for form 1449/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br><i>(Use as many sheets as necessary)</i> |   |    |   | <b>Complete if Known</b> |                        |
|  |   |    |   | Application Number       | 10/564,365-Conf. #9223 |
|  |   |    |   | Filing Date              | June 2, 2006           |
|  |   |    |   | First Named Inventor     | Banwari LAL            |
|  |   |    |   | Art Unit                 | N/A                    |
|  |   |    |   | Examiner Name            | Not Yet Assigned       |
| Sheet  | 2 | of | 2 | Attorney Docket Number   | 4661-0108PUS1          |

|  |    |   |  |
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|  |    | genome probing. Appl Environ Microbiol Vol 63: 1785-1793.   |  |
|  | CN | M., D. Lungerhausen, H. Murtada, and G. Rosenthal. 1995. Development and application of a new biotechnology of molasses in-situ method: detailed evaluation for selected wells in the Romashkino carbonate reservoir. In: The Fifth International Conference on Microbial Enhanced Oil Recovery and Related Biotechnology for Solving Environmental Problems (R. S. Bryant and K.L. Sublette. eds.), pp. 153-174. Office of Scientific and Technical Information, CONF-9509173. |  |
|  | CO | Raiders RA, McInerney MJ, Revus DE, Torbati HM, Knapp RM Jenneman GE (1986) Selectivity and depth of Microbial plugging in Berea sanstone cores. J. Industrial Microbiol: 195-203   |  |

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

|                       |  |                    |  |
|-----------------------|--|--------------------|--|
| Examiner<br>Signature |  | Date<br>Considered |  |
|-----------------------|--|--------------------|--|